SEMICONDUCTOR DEVICE FOR ELECTRO-OPTIC APPLICATIONS, METHOD FOR MANUFACTURING SAID DEVICE AND CORRESPONDING SEMICONDUCTOR LASER DEVICE

Abstract of the Disclosure

A semiconductor device for electro-optic applications includes a rare-earth ions doped P/N junction integrated on a semiconductor substrate. The semiconductor device may be used to obtain laser action in silicon. The rare-earth ions are in a depletion layer of the doped P/N junction, and are for providing a coherent light source cooperating with a waveguide defined by the doped P/N junction. The doped P/N junction may be the base-collector region of a bipolar transistor, and is reverse biased so that the rare-earth ions provide the coherent light.